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TRANSMITTAL FORM

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		First Named Inventor	Jeffrey D. Provost
		Art Unit	2116
		Examiner Name	Brown, Michael J.
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  - ☐ Fee Attached
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  - ☐ After Final
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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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Date	09/14/2007	Reg. No.	38,745

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PATENT
Serial No. 10/618,211
Atty. Docket No. CISCO-7357 (032590-210)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Jeffrey D. Provost	CONFIRMATION NO.:	4216
SERIAL NO.:	10/618,211		
FILING DATE:	07/11/2003		
TITLE:	INLINE POWER CONTROL		
EXAMINER:	Brown, Michael J.		
ART UNIT:	2116		

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APPEAL BRIEF

Dear Sir:

This paper is in support of a Notice to Appeal filed July 20, 2007, of the Office Action dated April 16, 2007, to the Board of Patent Appeals and Interferences.

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Table of Contents

Real Party in Interest

Cisco, Inc.

Related Appeals and Interferences

None.

Status of Claims

Claims 1-15 have been finally rejected and are on appeal.

Status of Amendments

No amendments after final have been filed.

Summary of Claimed Subject Matter

Electric connections that transmit data between networked devices such as telephones, computers, network access devices, and the like, may in some cases also be used to deliver power to the devices. ¶[0002], ll. 1-3. Power provided in this manner is known as phantom power, or power via media dependent interface (MDI). ¶[0002], ll. 4-6. Devices that supply power in such systems are referred to as power source equipment (PSE). ¶[0003], ll. 1-2. Devices that receive power are referred to as powered devices (PDs). ¶[0003], ll. 1-2. A prior art system 10 arranged in this manner is shown in FIG. 1, in which PSE 12 delivers phantom power to PDs 14A-14N by way of transmission media (for example, connections) 16A-16N. The transmission media are connected to the corresponding power source equipment and powered devices through a power interface at each end of the transmission media. ¶[0004], ll. 4-6. The multiple power interfaces of the power source equipment are often referred to as ports. ¶[0004], ll. 6-7. For each port of the power source equipment and the plurality of powered devices, there exists a physical layer (PHY 18). ¶[0004], ll. 7-8; ¶[0010], ll. 1-2; FIG. 2. Generally, the physical layer 18 consists of a physical coding sublayer (PCS), a physical medium attachment (PMA), and optionally a physical medium dependent (PMD) sublayer. ¶[0010], ll. 12-14. The physical layer includes an inline power control signal source. ¶[0004], ll. 8-9. The inline power control signal designates when to apply power to a port and when to remove power from the port. ¶[0004], ll. 9-11.

Claim 1 is directed to a physical layer (PHY 18, ¶[0004], ll. 7-8; ¶[0010], ll. 1-2; FIG. 2) for an inline power device (PSE 12 and/or PD 14A-N) of a network power system (10, FIG. 1). The physical layer (18) includes an inline power control signal (¶0014], ll. 1-9) source originating from the physical layer (¶[0014], ll. 7-8), wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 2 is directed to a power source equipment (PSE 12) of a network power system (12). The power source equipment includes at least one physical layer (PHY 18) including an

inline power control signal (¶0014], ll. 1-9) source originating from the physical layer (¶[0014], ll. 7-8), wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 4 is directed to a method of inline power for a network power system (10). The method includes sourcing an inline power control signal (¶0014], ll. 1-9) from a physical layer (¶[0014], ll. 7-8), wherein the inline power control signal originating from the physical layer is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 5 is directed to an apparatus for inline power for a network power system 10. The apparatus includes a physical layer (PHY 18) and means (PHY 18; ¶[0014], ll. 7-8) for sourcing an inline power control signal (¶0014], ll. 1-9) originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

Claim 6 is directed to a physical layer (PHY 18) for an inline power device of a network power system 10. The physical layer includes an inline power control signal (¶0014], ll. 1-9) source (PHY 18) originating from the physical layer (¶[0014], ll. 7-8), wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 7 is directed to a power source equipment (PSE 12) of a network power system 10. The power source equipment includes at least one physical layer (PHY 18) including an inline power control signal (¶0014], ll. 1-9) source originating from the physical layer (¶[0014], ll. 7-8), wherein the inline power control signal is configured to indicate when to apply power to a port

when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 9 is directed to a method of inline power for a network power system 10. The method includes sourcing an inline power control signal (¶0014], ll. 1-9) originating from a physical layer (¶[0014], ll. 7-8), wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 10 is directed to an apparatus for inline power for a network power system 10. The apparatus includes a physical layer (PHY 18) and means (PHY 18) for sourcing an inline power control signal (¶0014], ll. 1-9) originating from the physical layer (¶[0014], ll. 7-8), wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 11 is directed to a network switch for a network power system 10, the switch including at least one physical layer (PHY 18) including an inline power control signal (¶0014], ll. 1-9) source originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port. (¶[0014], ll. 5-7).

Claim 13 is directed to a system that includes one or more inline power devices (PSE 12) and one or more powered devices (PD 14A-N) coupled to an inline power device, each of the one or more inline power devices and each of the one or more powered devices having at least one port (¶0011], ll. 7-11), each port having a physical layer (PHY 18), the physical layer including an inline power control signal (¶0014], ll. 1-9) source wherein an inline power control signal source originating from the physical layer controls application of power to the port.

Grounds of Rejection to be Reviewed on Appeal

Whether Claims 1-15 are unpatentable under 35 U.S.C. 103(a) over U.S. Pat. No. 6,701,443 (Bell; hereinafter, "Bell") in view of U.S. Pat. No. 7,103,319 (Cai et al.; hereinafter, "Cai").

Argument

Claims 1-15

The Examiner has agreed and stated that Bell does not disclose an inline power source included in the physical layer. In particular, Bell states the following:

> FIG. 1 shows a remote powerability system 20 which is suitable for use by the invention. The system 20 is a computer network which includes a device 22-A (e.g., an IP phone) and a device 22-B (e.g., an IP switch). The devices 22-A, 22-B (collectively, devices 22) communicate with each other through a connecting medium 24. *In one arrangement, the devices 22 include physical layer devices (PHY)*, and the connecting medium 24 includes a Medium Dependent Interface (MDI) having multiple lines for carrying signals between the devices 22 (e.g., 10BaseT, 100BaseT, etc.). *The system 20 further includes a power apparatus 26 which connects with the device 22-B through connections 28. The power apparatus 26 includes a controller 30, a signal generator 32 and a detector 34.* Further details of the invention will now be discussed with reference to FIG. 2.

(Bell, Col. 4, lines 18 – 33) (emphasis added)

This portion of Bell makes clear that the physical layer is included in devices 22 (see Bell, Figure 1). Figure 3 shows clearly that it is power apparatus 26 that contains control circuitry 80. Therefore if a physical layer is included in Bell, it is included in device 22 and not power apparatus 26. Therefore, the physical layer (included in devices 22) cannot be the inline power control source as claimed.

The portion of the specification describing Figure 3 makes this distinguishing characteristic clear. In regard to Figure 3, Bell states the following:

> As shown in FIG. 3, the device 22-A is a remotely powerable device which includes a powerability indicator formed by a diode 70 and a resistor 72 connected in series between the centertaps 68 of the transformers 64-A and 66-A. The powerability indicator provides, in response to a test signal, a response signal to the connecting medium 24 indicating that the device 22-A is remotely powerable. In particular, the powerability indicator allows current to flow in only one direction (i.e., from the transformer 64-A to the transformer 66-A) which

uniquely characterizes the device 22-A as a remotely powerable device. In contrast, non-remotely powerable devices typically allow current flow in both directions.

As further shown in FIG. 3, the power apparatus 26 connects to the centertaps 68 of the transformers 64-B and 66-B of the device 22-B through the connections 28. The power apparatus 26 provides the test signal to the connecting medium 24 and receives the response signal from the connecting medium 24 through these connections 28 and the centertaps 68 of these transformers 64-B and 66-B.

The connecting medium 24 includes multiple lines 76, 78. In one arrangement, the connecting medium 24 uses 802.3 based technology (e.g., 10BaseT, 100BaseT, etc.). In this arrangement, the connecting medium 24 (e.g., Category 5 cabling) includes twisted pair wiring 76-1, 76-2 (e.g., for carrying a differential signal pair between the device 22-A and the device 22-B) and twisted pair wiring 78-1, 78-2 (e.g., for carrying a differential signal pair between the device 22-B and the device 22-A). The connecting medium 24 connects to the devices 22 through connectors 74 (e.g., RJ45 plugs and adaptors). When the remotely powerable device 22-A is properly connected to the connecting medium 24, the powerability indicator of the remotely powerable device 22-A (the diode 70) allows current to flow only in one direction, from lines 76-1, 76-2 to lines 78-1, 78-2.

The power apparatus 26, as shown in FIG. 3, includes control circuitry 80 and several direct current (DC) power supplies and switches. In particular, the power apparatus 26 includes a -48 volt (V) DC power supply 82 which is controllable by a switch 84, a -5 VDC power supply 86 which is controllable by a switch 88, and a +5 VDC power supply 90 which is controllable by a switch 92. The control circuitry 80 and switches 84, 88 and 92 form the controller 30 (see FIG. 1). The power supplies 82, 86 and 90 form the signal generator 32 (again, see FIG. 1). The power apparatus 26 further includes current detectors 94-1 and 94-2 which form the detector 34 (FIG. 1).

The control circuitry 80 is capable of selectively supplying -48 volts, -5 volts and +5 volts to the connecting medium 24 by operating the switches 84, 88 and 92. In particular, when the control circuitry 80 opens switches 84, 92 and closes the switch 88, the power supply 86 provides -5 volts to the connecting medium 24 in order to measure a current response (the response signal). Similarly, when the control circuitry 80 opens switches 84, 88 and closes the switch 92, the power supply 90 provides +5 volts to the connecting medium 24 in order to measure another current response. *Additionally, when the control circuitry 80 opens switches 88, 92 and closes the switch 84, the power supply 82 provides -48 volts to the connecting medium 24 in order to provide phantom power to the device 22-A which connects to the remote end of the connecting medium 24. It should be understood that the devices 22-A and 22-B can communicate with each other*

> *through the connecting medium 24 using differential pair signals while the power supply 82 applies power to the device 22-A through the connecting medium 24, i.e., while the device 22-A draws phantom power from the power apparatus 26 through the connecting medium 24.*
>
> Furthermore, it should be understood that the power supplies 86, 90 are preferably low current power supplies, i.e., capable of limiting the current to less than an amp (e.g., 25-30 milliamps) in order to prevent damaging any non-remotely powerable devices connecting to the connecting medium 24.
>
> In one arrangement, the control circuitry 80 includes a data processing device or processor. Here, a computer program product 98 (e.g., one or more CDROMs, tapes, diskettes, etc.) provides instructions which direct the operation of the processor. Alternatively, the processor acquires the instructions through other means, e.g., via a network download through the device 22-B, or has non-volatile storage associated with the processor (e.g., ROM, flash memory, etc.). Further details of the operation of the remote power system 20 will now be provided with reference to FIGS. 4 and 5.
>
> (Bell, col. 5, line 36 – col. 6, line 54) (Emphasis added)

This section of Bell describes Figure 3 and makes clear that the power apparatus 26 is connected to devices 22 through connections 28 and that it is the power apparatus 26 that includes the control circuitry 80.

Applicant respectfully submits therefore that Bell only discloses a physical layer as being included in devices 22 and makes no other mention of a physical layer. Bell clearly discloses that control circuitry 80 is included in power apparatus 26 (and not devices 22). Therefore, the physical layer of devices 22 cannot be the inline power control signal source.

The Examiner the turns to Cai and states that Cai includes an inline power source included in the physical layer. Applicant respectfully submits that Cai does not disclose or suggest an inline power source included in the physical layer. As cited by the Examiner, Cai discloses the following:

> This power control *method* is implemented on the physical layer of system software and processing.

(Cai, col. 8, lines 45 – 46) (Emphasis added)

Cai discloses that the power control method is implemented on the physical layer. This is the only reference that Cai makes to a physical layer. So, it is important to discern exactly what is implemented on the physical layer in Cai. A thorough reading of Cai makes clear that it is the method 100 (shown in Figure 8) that is disclosed as being implemented on the physical layer. Method 100 is a process used to decide which cell or cells to transmit the power control signal to. Cai does not disclose that the power control signal source is included in the physical layer but only that the method of determining which cells to transmit the power control signal to is implemented on the physical layer.

Cai cannot be viewed as disclosing or suggesting the claimed limitation because in Cai, the power control signal is transmitted from the user equipment to the multi-cell radio sites. Cai, therefore, does not teach or suggest including the power control signal source in the physical layer.

Moreover, Bell and Cai are not permissibly combined. Bell is concerned with discovering powerability conditions of a computer network (e.g., remotely powerable devices coupled to the network), whereas Cai is concerned with conserving power in a telecommunications system by adjusting transmission power of a broadcast channel. There is no suggestion in either Bell or Cai to suggest an advantage in their combination. Moreover, the present application fails to supply any motivation for their combination.

Additionally applicant respectfully submits Cai is non-analogous art. Cai is not in the field of applicant's endeavor, nor is Cai reasonably pertinent to the particular problem with which the inventor was concerned.

As noted above Cai is directed to conserving power, and not to a unified source for control signal for providing power. Accordingly, Cai cannot be properly deemed to be in the field of Applicant's endeavor. Applicant submits that the mere fact that Cai and the present

invention are applicable to networks is insufficient to establish that Cai is "in the field of applicant's endeavor".

Cai has no pertinence to the particular problem with which the inventor was concerned. A thorough reading of Cai makes clear that the inventive concept of Cai is not in the context of an "inline" power scheme as claimed.

Additionally, Cai is not prior art and its use in rejecting the claims of this application is therefore nondispositive. Applicant reserves the right to swear behind this reference as provided for under 37 C.F.R 1.131 pending the Examiner's response to these remarks.

For these reasons applicant respectfully submits that claims 1, 2, 4 - 6, 7, 9 – 11, and 13 are not rendered obvious by Bell alone or in combination with Cai..

As to dependent claims 3, 8, 12, 14 and 15, the argument set forth above is equally applicable here at least by virtue of their dependency.

Claims Appendix

1. A physical layer for an inline power device of a network power system, the physical layer comprising:

an inline power control signal source originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

2. A power source equipment of a network power system, the power source equipment comprising:

at least one physical layer including:

an inline power control signal source originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

3. The power source equipment as defined in claim 2, further comprising signal processing of the inline power control signal, wherein the signal processing is external to the at least one physical layer.

4. A method of inline power for a network power system, the method comprising:

sourcing an inline power control signal from a physical layer, wherein the inline power control signal originating from the physical layer is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

5. An apparatus for inline power for a network power system, the apparatus comprising:

a physical layer; and

means for sourcing an inline power control signal originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port

when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

6. A physical layer for an inline power device of a network power system, the physical layer comprising:

an inline power control signal source originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

7. A power source equipment of a network power system, the power source equipment comprising:

at least one physical layer including:

an inline power control signal source originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

8. The power source equipment as defined in claim 7, further comprising a signal processor configured to process the inline power control signal, wherein the signal processing is external to the at least one physical layer.

9. A method of inline power for a network power system, the method comprising:

sourcing an inline power control signal originating from a physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

10. An apparatus for inline power for a network power system, the apparatus comprising:

a physical layer; and

means for sourcing an inline power control signal originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

11. A network switch for a network power system, the switch comprising:

at least one physical layer including:

an inline power control signal source originating from the physical layer, wherein the inline power control signal is configured to indicate when to apply power to a port when there is no power applied to the port and when to remove power from the port when there is power applied to the port.

12. The switch as defined in claim 11, further comprising signal processing of the inline power control signal, wherein the signal processing is external to the at least one physical layer.

13. A system comprising:

one or more inline power devices;

one or more powered devices coupled to an inline power device, each of the one or more inline power devices and each of the one or more powered devices having at least one port, each port having a physical layer, the physical layer including an inline power control signal source wherein an inline power control signal source originating from the physical layer controls application of power to the port.

14. The system of claim 13 wherein the inline power devices are power source equipment.

15. The system of claim 13 further comprising:

a signal processor external to the physical layers to process the inline power control signal.

Evidence Appendix

None.

Related Proceedings Appendix

None.

Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,

THELEN REID BROWN RAYSMAN & STEINER, LLP

Dated: 09/14/2007

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